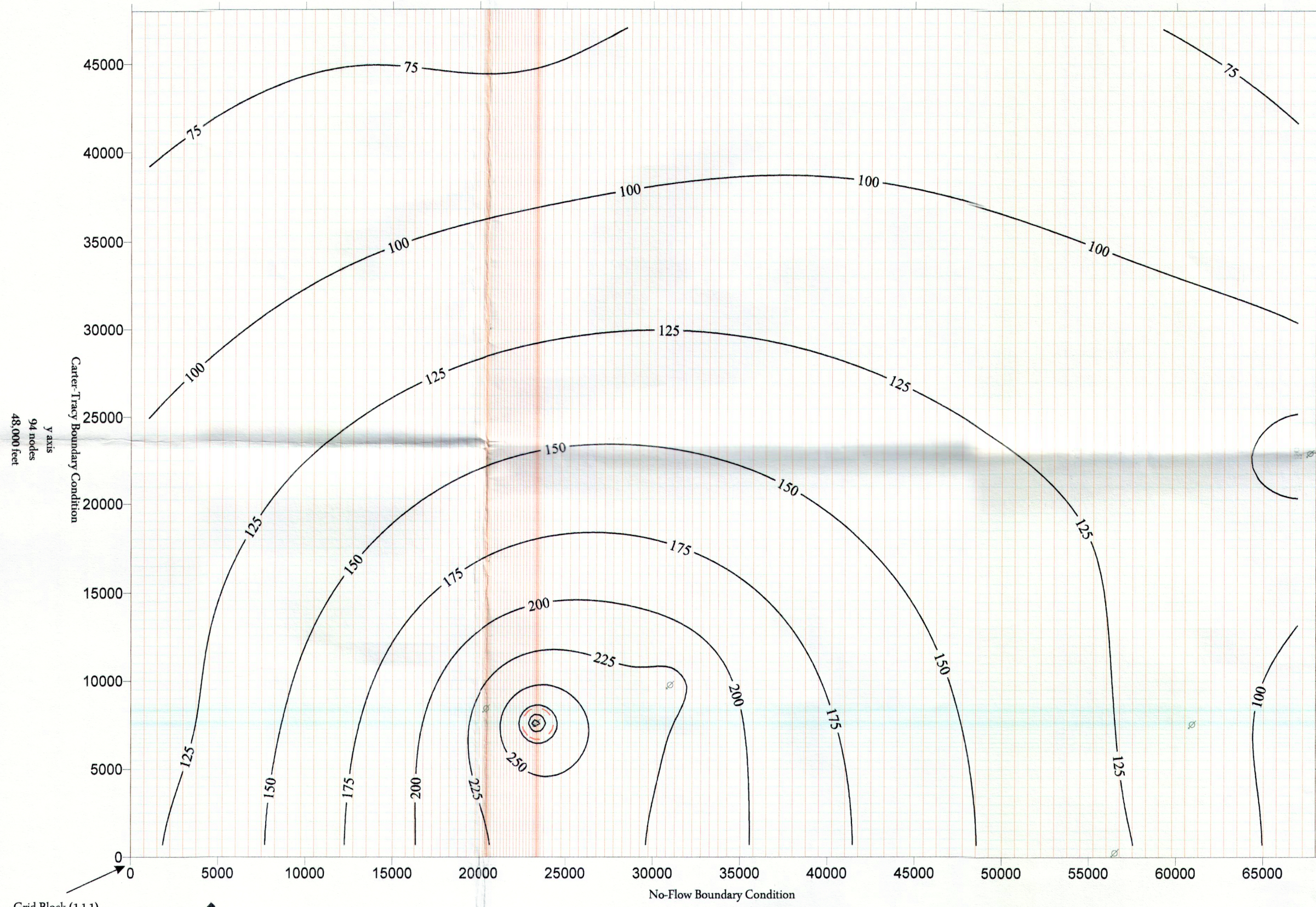


ExMob_AB Pressure_A

Carter-Tracy Boundary Condition



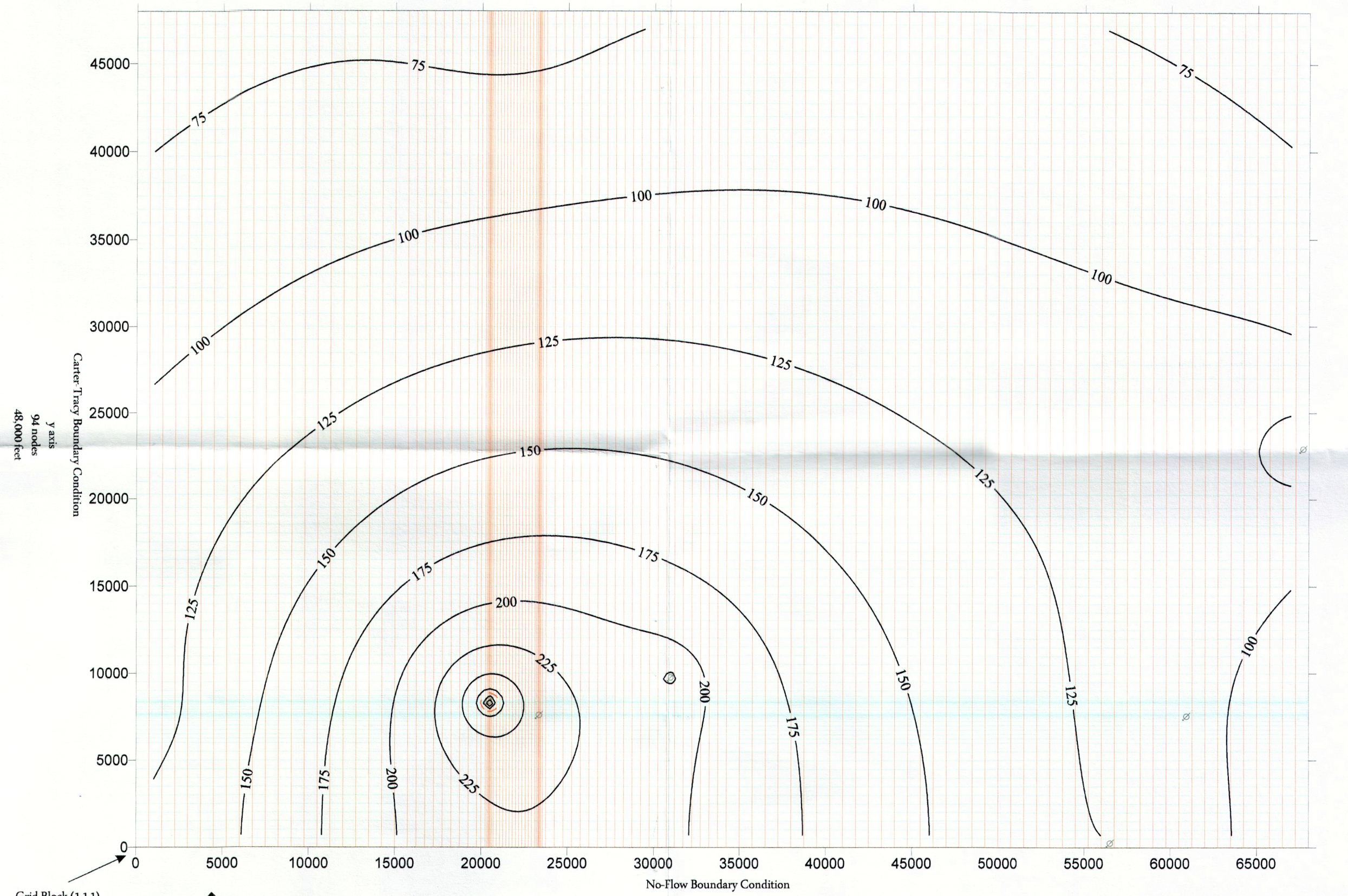
SWIFT Input File No.:	Model Run Description	Input Parameters	Parameter Value
ExMob_AB Pressure_A.dat	Reservoir pressure buildup at end of operations in Frio A/B Sand. Injection into offset injection wells is included in SWIFT model simulation. Historical injection into WDW-397 from July 1, 2008 until December 31, 2008 at 700 gpm. Future injection into WDW-397 at 1,200 gpm from January 1, 2009 until December 31, 2020.	Reservoir Flow Capacity Hydraulic Conductivity Intrinsic Permeability (k) Porosity Reservoir Thickness (h) Reservoir Dip Injectate Density Injectate Specific Gravity Injectate Viscosity* Reservoir Brine Density Reservoir Brine Specific Gravity Reservoir Brine Viscosity* Ground Water Flow Rate Rock Compressibility Fluid Compressibility Reservoir Temperature SWIFT Effective Diffusion Coefficient Longitudinal and Lateral Dispersivity	81,250 mD-ft 3.845 ft/day 650 mD 0.28 125 ft variable structure 64.33 lb/ft ³ @ 173 °F 1.05 @ 60 °F 0.428 cP @ 173 °F 66.64 lb/ft ³ @ 1735 °F 1.091 @ 60 °F 0.495 cP @ 173 °F 0.0 ft/yr 3.20 x 10 ⁻⁴ psi ⁻¹ 2.39 x 10 ⁻⁴ psi ⁻¹ 173 °F 8.24 x 10 ⁻⁴ ft ² /day 100 ft and 10 ft

* variable viscosity with temperature from 60°F to 200°F

MODEL RESULTS SUMMARY: The maximum pressure buildup in the Frio A/B Sand in WDW-397 occurs on December 31, 2020. The reference depth for the model predicted bottom-hole pressures is 6,990 feet subsea. The maximum predicted flowing bottom-hole grid block pressure on December 31, 2020 is 3,500 psia. The maximum predicted flowing bottomhole well bore pressure on December 31, 2020 is 3,590 psia. The pre-injection native static reservoir pressure is 3,047 psia. Therefore, the pressure buildup in the grid block cell is no more than 453 psi and the pressure buildup predicted at the well is no more than 543 psi. The cone of endangering influence includes the area within the pressure isopleth representing a 281-psi increase in reservoir pressure. For SWIFT pressure model run ExMob_AB Pressure_A.dat, the 281-psi pressure contour no farther than 850 feet from the WDW-397 wellbore.

ExMob_AB Pressure_B

Carter-Tracy Boundary Condition



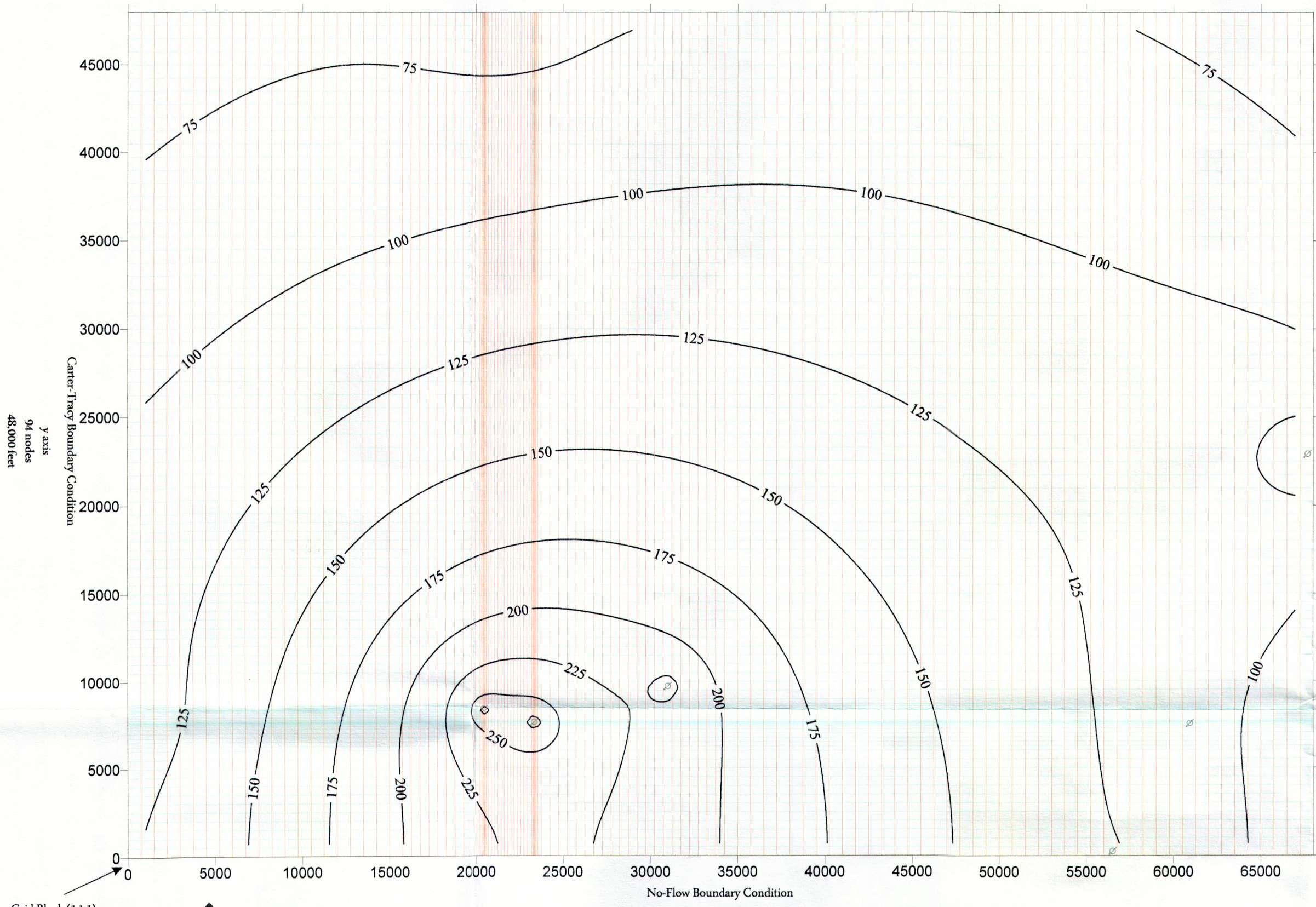
SWIFT Input File No.:	Model Run Description	Input Parameters	Parameter Value
ExMob_AB Pressure_B.dat	Reservoir pressure buildup at end of operations in Frio A/B Sand. Injection into offset injection wells is included in SWIFT model simulation. Historical injection into WDW-397 from July 1, 2008 until December 31, 2008 at 700 gpm. Future injection into WDW-398 at 1,200 gpm from January 1, 2009 until December 31, 2020.	Reservoir Flow Capacity Hydraulic Conductivity Intrinsic Permeability (k) Porosity Reservoir Thickness (h) Reservoir Dip Injectate Density Injectate Specific Gravity Injectate Viscosity* Reservoir Brine Density Reservoir Brine Specific Gravity Reservoir Brine Viscosity* Ground Water Flow Rate Rock Compressibility Fluid Compressibility Reservoir Temperature SWIFT Effective Diffusion Coefficient Longitudinal and Lateral Dispersivity	81,250 mD-ft 3.845 ft/day 650 mD 0.28 125 ft variable structure 64.33 lb/ft ³ @ 173 °F 1.05 @ 60 °F 0.428 cP @ 173 °F 66.64 lb/ft ³ @ 1735 °F 1.091 @ 60 °F 0.495 cP @ 173 °F 0.0 ft/yr 3.20 x 10 ⁻⁴ psi ⁻¹ 2.39 x 10 ⁻⁴ psi ⁻¹ 173 °F 8.24 x 10 ⁻⁴ ft ² /day 100 ft and 10 ft

* variable viscosity with temperature from 60°F to 200°F

MODEL RESULTS SUMMARY: The maximum pressure buildup in the Frio A/B Sand in WDW-398 occurs on December 31, 2020. The maximum predicted flowing bottom-hole grid block pressure on December 31, 2020 is 3,505 psia. The maximum predicted flowing bottomhole well bore pressure on December 31, 2020 is 3,600 psia. The pre-injection native static reservoir pressure is 3,063 psia. Therefore, the pressure buildup in the grid block cell is no more than 442 psi and the pressure buildup predicted at the well is no more than 537 psi. The cone of endangering influence includes the area within the pressure isopleth representing a 281-psi increase in reservoir pressure. For SWIFT pressure model run ExMob_AB Pressure_B.dat, the 281-psi pressure contour no farther than 625 feet from the WDW-398 wellbore.

ExMob_AB Pressure_C

Carter-Tracy Boundary Condition



SWIFT Input File No.:	Model Run Description	Input Parameters	Parameter Value
ExMob_AB Pressure_C.dat	Reservoir pressure buildup at end of operations in Frio A/B Sand. Injection into offset injection wells is included in SWIFT model simulation. Historical injection into WDW-397 from July 1, 2008 until December 31, 2008 at 700 gpm. Future injection into WDW-397 and WDW-398 at 600 gpm (each) from January 1, 2009 until December 31, 2020.	Reservoir Flow Capacity Hydraulic Conductivity Intrinsic Permeability (k) Porosity Reservoir Thickness (h) Reservoir Dip Injectate Density Injectate Specific Gravity Injectate Viscosity* Reservoir Brine Density Reservoir Brine Specific Gravity Reservoir Brine Viscosity* Ground Water Flow Rate Rock Compressibility Fluid Compressibility Reservoir Temperature SWIFT Effective Diffusion Coefficient Longitudinal and Lateral Dispersivity	81,250 mD-ft 3.845 ft/day 650 mD 0.28 125 ft variable structure 64.33 lb/ft ³ @ 173 °F 1.05 @ 60 °F 0.428 cP @ 173 °F 66.64 lb/ft ³ @ 1735 °F 1.091 @ 60 °F 0.495 cP @ 173 °F 0.0 ft/yr 3.20 x 10 ⁻⁴ psi ⁻¹ 2.39 x 10 ⁻⁴ psi ⁻¹ 173 °F 8.24 x 10 ⁻⁴ ft ² /day 100 ft and 10 ft

* variable viscosity with temperature from 60°F to 200°F

MODEL RESULTS SUMMARY: The maximum pressure buildup in the Frio A/B Sand in WDW-397 occurs on December 31, 2020. The maximum predicted flowing bottom-hole grid block pressure on December 31, 2020 is 3,294 psia. The maximum predicted flowing bottomhole well bore pressure on December 31, 2020 is 3,440 psia. The pre-injection native static reservoir pressure is 3,047 psia. Therefore, the pressure buildup in the grid block cell is no more than 347 psi and the pressure buildup predicted at the well is no more than 393 psi. The cone of endangering influence includes the area within the pressure isopleth representing a 281-psi increase in reservoir pressure. For SWIFT pressure model run ExMob_AB Pressure_C.dat, the 281-psi pressure contour no farther than 250 feet from the WDW-397 wellbore. The maximum pressure buildup in the Frio A/B Sand in WDW-398 occurs on December 31, 2020. The maximum predicted flowing bottom-hole grid block pressure on December 31, 2020 is 3,402 psia. The maximum predicted flowing bottomhole well bore pressure on December 31, 2020 is 3,450 psia. The pre-injection native static reservoir pressure is 3,063 psia. Therefore, the pressure buildup in the grid block cell is no more than 339 psi and the pressure buildup predicted at the well is no more than 387 psi. For SWIFT pressure model run ExMob_AB Pressure_C.dat, the 281-psi pressure contour no farther than 150 feet from the WDW-398 wellbore.

PLATE 7-9

TERRA
DYNAMICS INC

**PRESSURE BUILDUP
MODEL GRID AND RESULTS
(ExMob_AB Pressure)
(Frio A/B Sand Pressure Models)**

PREPARED FOR

**EXXON MOBIL CORPORATION
PASADENA, TEXAS**

DRAWN BY: tdm	SCALE: As Indicated	DATE: 02-14-2011
DESIGNED BY: SAME	DATE: 11-101	
CHECKED BY: T. Moody		